

CHAPTER 7

COMBAT SUPPORT

Tactical leaders must understand the techniques of controlling and integrating fire, maneuver, and protection; coordinating direct and indirect fires; utilizing air and naval fires; and substituting massed fires for massed troops.

FM 100-5, 1986

In addition to knowing how to employ his organic direct and indirect fire support assets, the company commander must know how to employ nonorganic combat support elements that support his company.

Section I. RELATIONSHIPS

The company commander must also understand the command or support relationships established between his company and supporting units.

7-1. COMMAND RELATIONSHIPS

Command responsibility and authority are established routinely through the following standard relationships:

- a. **Organic.** This is a unit that forms an essential part of an Army organization and is listed in its table of organization and equipment or table of distribution and allowances.
- b. **Assigned.** This is a unit that is placed in an organization on a permanent basis and is controlled and administered by the organization to which it is assigned.
- c. **Attached.** In this relationship, a unit is assigned temporarily to a command other than its parent unit. The attached unit is under the command of the commander of the unit to which it is attached.

(1) The CO exercises the same degree of C2 as with his organic units.

(2) It is subject to limitations specified by the commander directing the attachment. This relationship includes the responsibility for CSS, UCMJ, training, and operations. (The responsibility for transfer and promotion is retained by the parent unit.) It does, however, impose an administrative and logistical burden on the unit to which the attachment is made.

d. **Operational Control.** This relationship places a unit under the control of a commander for specific operations. The relationship is limited by function, time, or location. OPCON does not imply responsibility for administration, logistics, discipline, internal organization, or training. The commander's relationship with OPCON units is otherwise the same as with organic or attached subordinate units.

7-2. SUPPORT RELATIONSHIPS

This is the action of an element or unit that aids, protects, complements, or sustains another unit IAW an order requiring such support. A supporting unit assists another unit, but is not under the command of that unit. The commander's relationship with supporting units is as follows:

- He ensures that the supporting unit establishes liaison and communications with his unit.
- He keeps the supporting unit informed of the situation and the support needed.
- He is advised of the employment considerations for the supporting unit by its leader.

Requests to a supporting unit for support are honored as an order. In case of a conflict, the supporting unit leader refers the matter to his parent unit commander. The request or order in question will, however, be honored until the conflict is resolved.

a. **Direct Support.** This is when one unit, under command of its parent unit commander, supports another specific unit. The supporting unit answers directly to the supported unit's requests. The CO may not suballocate, reassign, or task-organize the force supporting him.

b. **General Support.** Units in GS to battalion are under control of their parent unit commander. They support the battalion as a whole, not any specific company. Company commanders request support from the GS unit through the battalion.

Section II. NONORGANIC ASSETS

Combat support of an infantry company is provided by the battalion and supporting units. It may include fires from the battalion mortar platoon and the antiarmor platoon, or supporting fire by field artillery, tactical aircraft, and naval guns. Air defense is provided by the division ADA battalion. The battalion scout platoon may also support the company. Other CS is provided by engineer units, NBC units, and MI units.

7-3. BATTALION

The battalion mortar platoon and antiarmor platoon respond to support requests from rifle companies according to the battalion fire plan. The battalion scout platoon and snipers normally work directly for the battalion; however, at times they may operate in the company's AO.

a. The battalion's antiarmor platoon is normally assigned areas of responsibility for the battalion.

(1) When TOWs are positioned in the company's sector, the TOW section or squad leader coordinates his positions and sectors of fire with the CO. The commander may have the leader tie in to the company wire net or enter the radio net. A TOW section or squad may be attached to or under OPCON of the rifle company. In this case, the CO assigns missions and positions it to support his concept. He employs these systems to make the most of their long-range, armor-killing capability. The TOW sight is an effective asset for the company R&S plan.

(2) Many antiarmor platoons have the capability to replace the TOW weapon system with either a MK19 (40-mm grenade machine gun) or the M2 (caliber .50 machine gun). This allows the platoon to provide fire support when there is no threat of enemy armor. Both of these weapon systems can be fired from the HMMWV, using the HMMWV interchangeable mount system (HIMS) and also ground mounted on a tripod. FM 7-20 discusses the MK19 in more detail.

(a) The MK19 is effective at 1,500 meters against point targets and out to 2,200 meters against area targets. The weapon has a sustained rate of fire of 40 rounds each minute and a rapid rate of fire of 60 rounds each minute. The weapon system (gun,

tripod, and T&E) weighs about 120 pounds. A container of 48 rounds weighs 64 pounds. The weight of this system precludes manpacking for other than short distances. The AN/TVS-5 can be mounted on the weapon to provide effective night fires.

(b) The standard round of ammunition is HEDP, which can defeat 50-mm of RHA or 16 inches of concrete. An HE round is also available for engaging troops in the open or other soft targets. Both rounds have a bursting radius of 15 meters and a flat trajectory out to 800 meters. The weapon can be employed in an indirect-fire role to engage targets from 800 meters out to the maximum effective range. The methods of controlling indirect fires is the same as the 60-mm mortar—direct lay, direct alignment, or an observer to provide corrections and the use of the T&E mechanism to apply these corrections to the gun.

(c) In the offense, the MK19 can be employed similar to the 60-mm mortar in the indirect-fire role and similar to the TOW in the direct-fire role. The MK19 can be employed from an overwatch position to provide responsive suppressive fires if enemy contact is made. The weapon can also suppress/destroy enemy weapons and positions on the objective prior to the infantry assault. It may also support the isolation of the objective area by blocking likely avenues of approach with concentrated destructive fires. When employed from the M3 tripod with the T&E, the gun is very accurate for an area type weapon.

(d) In the defense, the MK19 can be effective in both the direct and indirect-fire roles. It can be assigned a priority target or an FPF just like a 60-mm mortar. The enemy will attempt to locate and destroy these weapons early in his attack. Unless the MK19s are employed from defilade/fire from prepared dug-in firing positions, they are very vulnerable. The mobility capability for the MK19 when mounted on the HMMWV must be balanced against the vehicle's vulnerability to detection and destruction.

b. The company receives supporting fires from the battalion mortars. The battalion order designates the priority of fires and allocates priority targets. The CO considers his priority in the battalion plan. If he is first in priority, his calls for fire take precedence over all other battalion units. This may allow the CO to depend less on the company mortars or even move without them to lighten the soldiers' loads. The battalion commander should be aware that the company is without its mortars. Also, the CO must understand the risks involved; for example, the priority of fires may change. If a priority target is allocated to the company, the CO plans to employ it when and where it will be most effective.

c. The battalion scout platoon is organized and equipped for reconnaissance—not to seize/retain terrain. Its primary missions are to reconnoiter and screen. When the scout platoon is operating near the company, the CO may communicate with the scout platoon leader on the battalion command net, or he may use visual signals. Necessary signals and contact procedures are arranged between the CO and the scout platoon leader. If scouts must pass through the company (or vice versa), contact points, passage points, passage lanes, guides, and procedures must be arranged. The scout platoon may be attached to the company for a counterreconnaissance mission. Scouts serve as the commander's eyes and ears (not fists) on the battlefield. Scouts provide continuous battlefield information on operations; they should only use their organic weapons in self-defense.

d. Snipers may operate in support of the company for specific missions. They are most effective when tasked to kill specific enemy soldiers and when allowed to operate with few restrictions.

7-4. SUPPORTING UNITS

Artillery and, in some cases, tactical aircraft/attack helicopters supporting the battalion respond to calls for fire from the companies based on the priority of fire.

a. **Field Artillery.** Artillery fire is planned (to support the battalion commander's concept of the operation) by the battalion FSO in coordination with the plans developed by the battalion S3. Company indirect fire support is planned by the company FSO and approved by the CO. The integration of indirect fires is critical to the success of the company. The effects of these fires on an enemy force are much greater than the effects of the company's organic weapons. Artillery provides the most destructive, accurate, and flexible combat multiplier the CO has to employ. Table 7-1 lists the capabilities of the indirect fire systems that may support an infantry company.

(1) Field artillery can fire high explosive, illumination, and white phosphorous ammunitions. The 155-mm units can also fire dual-purpose improved conventional munitions and scatterable mines. The DPICM is a lethal antipersonnel and antiarmor munition containing bomblets that are dispersed over a wide area because they are ejected high above the target during the flight of the carrier projectile. The bomblets have an antipersonnel effect and can also penetrate up to 7 centimeters of armor. FASCAM rounds contain a number of mines with self-destruct features, which are set to detonate at specific times (Table 7-2). The rounds may contain either antipersonnel or antiarmor mines that arm shortly after impact. Companies do not normally plan/employ FASCAM, but the CO should be familiar with these weapons (FM 7-20).

(2) Mortars and artillery fire can be combined to cover targets. For example, mortars can fire illumination while artillery fires high explosives or DPICMs. It is the CO's responsibility to ensure each system (mortars, artillery, and direct fire) is employed when and where it has the greatest effect on the enemy.

CALIBER	60-mm	81-mm	81-mm (improved)	107-mm	120-mm	105-mm	105-mm	155-mm
MODEL	M224	M29A1	M252	M30	M285	M102	M119	M198
MAX RANGE (HE) (m)	3,490	4,595	5,608	6,840	7,200	11,500	14,000	18,100
PLANNING RANGE (m)						11,500	11,500	14,600
PROJECTILE	HE, WP, ILLUM	HE, WP, ILLUM	HE, WP, ILLUM, RP	HE, WP, ILLUM	HE, SMK, ILLUM	HE,WP, ILLUM, HEP-T, APICM, CHEM, APERS, RAP	HE M760 ILLUM, HEP-T APICM, CHEM, RAP	HE,WP, ILLUM, SMK, CHEM, NUC, RAP, FASCAM, CPHD, AP/DPIC-M
MAX RATE OF FIRE	30 RPM FOR 1 MIN	30 RPM FOR 1 MIN	30 RPM FOR 2 MIN	18 RPM FOR 1 MIN	15 RPM FOR 3 MIN	10 RPM FOR 1 MIN	10 RPM FOR 1 MIN	4 RPM FOR 1 MIN
SUSTAINED RATE OF FIRE (rd/min)	20	8	15	3	5	3	3	2
MINIMUM RANGE (m)	70	70	83	770	180	←	FIRE DIRECT	→
FUZES	MO	PD,VT, TIME, DLY	PD,VT, TIME, DLY	PD,VT, TIME, DLY	MO	PD, VT,MT MTSQ, CP, DLY	PD,VT, MTSQ, CP,MT DLY	PD,VT, CP,MT, MTSQ, DLY
LEGEND AP-Armor Piercing APERS-Antipersonnel APICM-Antipersonnel Improved Conventional munitions CHEM-Chemical CP-Concrete Piercing CPHD-Copperhead DLY-Delay DPICM-Dual Purpose Improved Conventional Munitions FASCAM-Family of Scatterable Mines HE-High Explosive HEP-T-High Explosive Plastic Tracer ILLUM-Illumination MIN-Minute MO-Multioption-VT,PD,DLY MT-Mechanical Time MTSQ-Mechanical Time Super Quick NUC-Nuclear PD-Point Detonating RAP-Rocket Assisted Projectile RP-Red Phosphorus RPM-Rounds per minute SMK-Smoke TIME-Adjustable Time Delay VT-Variable Time WP-White Phosphorous								

Table 7-1. Indirect-fire capabilities.

TYPE OF MINE	ARMING TIME	SELF-DESTRUCT TIMES
Adam (AP)	2 minutes	4 hours or 48 hours
RAAM (AT)	45 seconds	4 hours or 48 hours
GEMSS	45 minutes	5 days or 15 days
MOPMS	2 minutes	4 hours
Gator/ Volcano	2 minutes	48 hours or 15 days

Table 7-2. FASCAM arming and self-destruct times.

b. **Air Defense.** Air defense support, if provided, is normally a MANPAD (Stinger) team in or near the company's position. The two-man team carries six missiles in its vehicle (HMMWV). It should be positioned to provide air defense for critical assets the commander feels are enemy air targets (for example, the company trains). These positions should cover the most likely avenue of enemy air approach.

(1) The Stinger's planning range is 5,000 meters. The weapon's firing signature may pinpoint its position if enemy pilots see the blast area signature (front and rear). Soldiers must be kept clear of the launch area to avoid the blast and detection by enemy pilots.

(2) Each MANPAD team receives early warning of incoming aircraft through the AD early warning net. The CO should have the team tie in to the company net so the team can alert him when enemy aircraft approach. The warning is then given to the entire company.

(3) When the company is moving, the missile team can support either by overwatching or by moving within the company formation. In the overwatch, the missile team will be positioned 500 to 1,000 meters behind the lead elements, providing two thirds of the missiles' range forward of the protected company. If integrated, the missile team normally moves dismounted using the best terrain to support the air defense mission. Missile teams can be split with one gunner in the overwatch and one moving with the unit.

(4) Normally, these ADA assets are DS to the battalion and collocate with part of the company for security.

(5) Other air defense units may also support the battalion. Chaparral platoons from the corps' ADA brigade and Vulcan batteries from the division's ADA battalion are deployed to protect critical division assets. If a Chaparral/Vulcan unit is located near the company, the company should coordinate weapons positions, security, and aircraft early warning. By exchanging frequencies or by tying in to the company wire net, a better defense and early warning system can be established. In emergencies and when there is no air threat, a Vulcan may be used in a ground support role against dismounted or motorized enemy troops. Its maximum effective range in a direct-fire mode is 2,200 meters and in an indirect-fire role, it is 4,500 meters.

(6) An infantry company will not normally receive any dedicated air defense assets. It is therefore imperative that it apply the fundamentals of passive air defense measures during all phases of the tactical mission. Organic weapons can be extremely effective if

the principles of small arms for air defense are adhered to (FM 7-8). The CO must ensure that his soldiers know the correct weapons control status. These are used to protect friendly aircraft and to prevent soldiers from engaging enemy aircraft and disclosing the company's location.

(7) The CO considers the following factors to determine his AD priorities.

(a) Enemy air threat. The CO considers the threat of CAS and attack helicopters--their likely air avenues of approach and their effect on his operation. The AD warning status provides the probability of and the basic level of an enemy air attack. The status may be—

- Red—Attack is imminent or in progress.
- Yellow—Attack is probable.
- White—Attack is not probable.

The weapon control status dictates the freedom to engage enemy aircraft. It protects friendly aircraft while still providing air defense. The status may be—

- Weapons free. Units may fire at any aircraft not positively identified as friendly. (This is the least restrictive status.)
- Weapons tight. Units fire at only those aircraft positively identified as hostile.
- Weapons hold. Units do not fire except in self-defense.

NOTE: Hostile criteria refers to how an aircraft may be identified and designated as hostile or friendly. This criteria will normally be disseminated through ADA channels, but may also be sent to the company through the battalion command net. However, any aircraft seen committing a hostile act may normally be designated as hostile.

(b) Vulnerability. The CO determines which of his units are more likely to be attacked. Vehicles are more easily detected than personnel, moving units more likely than stationary.

(c) Criticality. The CO determines which unit, weapon, or asset is more critical to the operation.

(d) Recuperability. Some units are more likely to suffer damage/casualties as a result of an air attack. They may also take longer to recover.

c. **Close Air Support.** CAS is normally provided by the Air Force, but may also be provided by Navy and Marine aircraft. CAS aircraft carry a variety of munitions, to include bombs (free-fall and guided), cluster bomb units, antiarmor missiles, napalm, rockets, and scatterable mines. In general, CAS ordnance is most effective against tanks and other armored vehicles, moving targets, and troops (exposed and protected). Some CAS aircraft carry the 20-mm cannon, which is effective against lightly armored vehicles. The A-10 airplane carries the 30-mm cannon, which is effective against tanks and other armored vehicles. Although the company FSO is not the primary designator, he has the capability to employ laser designators to guide CAS precision munitions.

d. **Naval Gunfire.** This support is planned and controlled by an element of the air and naval gunfire liaison company, which is supporting the operation. A shore fire control party from the ANGLICO may support an infantry battalion when naval gunfire is available. The SFCP consists of a naval gunfire liaison team and a naval gunfire spot team. The liaison team assists the battalion FSO in planning and controlling naval gunfire

support. The spot team, which is similar to the company's FSO, may operate with one of the maneuver companies.

e. **Engineer.** An engineer platoon may be placed in DS of a battalion. The engineers supporting dismounted infantry units are usually sappers. Although each platoon has mine detectors, demolition kits, and chain saws, they use field expedients, ingenuity, and specialized training to accomplish many of their tasks. In situations where heavy earthmoving equipment is available, the M9 ACEs and SEEs from the engineer battalion may be attached to engineer elements. The ACE is most effective for digging vehicle survivability positions and for countermobility tasks. The SEE is best used to dig weapon positions or trench lines.

(1) Engineer support to the rifle company is broken down into three major mission areas: mobility, countermobility, and survivability. Engineers provide this support either by performing the job themselves or providing expertise and assistance to the infantry company. The tasks normally provided within each of these categories are shown in Table 7-3.

MOBILITY
Breaching obstacles. Clearing routes. Expedient gap crossing. Constructing combat roads/trails.
COUNTERMOBILITY
Constructing obstacles to turn, fix, block, or disrupt enemy forces.
SURVIVABILITY
Constructing crew-served weapons and vehicle fighting positions. Constructing protective emplacements. Constructing strongpoints.

Table 7-3. Engineer missions.

(2) Engineers supporting the company during offensive operations are normally attached or DS to the unit. The CO determines how they can best support his company's maneuver. The technical expertise of the engineers is a capability that must be used. The CO ensures engineers are involved in reconnaissance missions or with the lead unit in a movement. If a breach is required, involve the engineers in the planning. Normally, the breach element is an infantry platoon. If an engineer squad is attached to the company, they should be attached to the breach element. The engineers can also be used during rehearsals to train the infantry soldiers in employing breaching equipment. During consolidation, the engineers can prepare obstacles to support the company fire plan. The responsibility for requesting and transporting Class IV and V for engineer tasks is always the supported unit's, regardless of the command or support relationship.

(3) Engineers supporting the company during defensive operations are normally in DS to the unit. An engineer squad or platoon without earthmoving equipment is most effective with countermobility tasks. They can prepare minefields, wire obstacles, and other obstacles, such as abatis, log cribs, and log hurdles. The engineer leader must be

involved in the planning process to ensure the obstacle plan is integrated with the scheme of maneuver and scheme of fires. The obstacle plan supports the maneuver and fire plans in several ways.

- The obstacles can disrupt the enemy's movement, resulting in more effective fires and additional time to maneuver forces.
- The obstacles may fix or block the enemy so he can be destroyed by fire.
- Obstacles can turn the enemy or prevent him from using terrain for protection. This allows direct-fire weapons to achieve a flank or rear shot on an armored vehicle.

NOTE: The location of obstacles is critical; they are more effective when the enemy is unaware of them. If he is able to locate them during his reconnaissance, he will plan a bypass or breach.

Although the CO determines the most effective use of engineer assets and prioritizes their work, he depends on the engineer leader for advice and recommendations.

f. **Nuclear, Biological, and Chemical.** Reconnaissance and decontamination support is provided by the corps or divisional NBC defense company. An NBC defense platoon from the NBC defense company can be attached to each brigade. The brigade commander can control the entire platoon or have a decontamination squad support each battalion.

(1) Most NBC operations are initiated and controlled at battalion and higher echelons. Rifle companies execute assigned tasks, take designated protective measures, send and receive reports, and provide personnel and teams as requested. Rifle companies perform hasty decontamination of their own personnel and equipment. The NBC NCO assists the commander by recommending decontamination, supervising the decontamination team and process, and coordinating with the XO/ISG and battalion staff for the necessary augmentation to perform hasty decontamination.

(2) Within the battalion, there is a chemical officer and a noncommissioned officer. They advise and assist the battalion commander on the planning and conduct of NBC training and operations. At company level, there is an NBC defense team, which includes an officer and two NCOs. The officer position is an additional duty assigned to one of the company officers. One of the NCO positions (NBC operations NCO) is authorized by the TOE. The other (assistant NBC operations NCO) is an additional duty assigned to one of the company NCOs. The company NBC defense team is responsible for advising and assisting the CO on the planning and conduct of NBC training and operations, and for the organizational maintenance on NBC equipment.

(3) Because of the capability of a growing number of nations to employ nuclear and chemical weapons and the apparent willingness of some nations to use them, infantry companies must plan from the outset to fight in an NBC environment.

(4) The CO is responsible for preparing his unit to operate in an NBC environment. He does this by—

(a) Continuing normal operations and reducing his unit vulnerability through terrain shielding and increased protective measures while positioning elements to accomplish the mission.

(b) Specifying a level of protection that will reduce the risk of mass casualties when faced with an NBC threat.

(5) The NBC NCO and designated monitor and survey teams are responsible for—

(a) Determining the presence of an NBC hazard by using observation, chemical alarms, detection devices, and warning personnel to take proper defensive action.

(b) Conducting monitoring and survey efforts to determine the extent and degree of contamination of a given area in support of company or battalion operations.

(c) Decontaminating personnel and equipment.

(d) Recommending operational exposure guidance designed to minimize casualties due to nuclear radiation hazards.

(e) Conducting area damage control operations to minimize the impact of enemy-delivered NBC weapons.

g. Military Intelligence. The infantry battalion S2 plans the employment of the supporting MI elements, which come from the division MI battalion. When they are in the company's area, the CO coordinates their positioning. MI support normally consists of remote sensors and radars for day and night RSTA.

(1) REMS may supplement the platoon early warning systems by covering dead space or pinpointing enemy movement. REMS operators detect moving enemy soldiers and can assist FOs in calling for and adjusting indirect fire on them. They also can estimate the number of enemy soldiers or vehicles detected by their equipment.

(2) Radar teams can also be positioned in the company area. Each team has AN/PPS-15 or AN/PPS-5A radar. The AN/PPS-5A can detect moving personnel out to 6,000 meters and moving vehicles out to 10,000 meters. The AN/PPS-15 is man portable and can detect moving personnel out to 1,500 meters and moving vehicles out to 3,000 meters. They both can scan a wide area or monitor a small area or point target (for example, a bridge). They can guide friendly soldiers in a night attack or guide returning or lost patrol units to passage points.

(3) The radar should be positioned where it can use a narrow beam to reduce its chance of being detected by the enemy. It is an active system easily located by enemy DF systems. It is located in a secure position, but away from other units. The team ties in to the company wire net to pass along any enemy information.

Section III. FIRE SUPPORT PLANNING

Fire planning begins with the brigade commander and his FSCOORD. This top-down planning also includes prioritizing and allocating fire support assets. The responsibility for planning/ executing the critical brigade targets may be assigned to battalion commanders and subsequently, a company commander. However, their plans must clearly focus on the critical targets/decisive points. Thus only those critical targets within the brigade, as developed by battalion and company commanders, are formally planned and passed to the artillery FDC. Additional targets are informally planned by the FSO for possible use, depending on enemy actions.

7-5. MANEUVER COMMANDER'S INTENT

The CO ensures the intent for maneuver and fire support is clearly understood by the FSO. He identifies the role of fire support in the scheme of maneuver (when, where,

what, and why) by explaining in detail the concept of the operation, scheme of maneuver, and tasks for fire support to the FSO.

a. Providing this level of guidance is not easy. Artillery fires are not instantaneous; three to seven minutes are required to process routine targets and get fires in the target area. Planning must allow for this lag time. While wargaming the maneuver, the CO refines the critical targets or EAs, priority of targets, priority of engagement, sequence of fires, and results desired. Then he can see when and how to synchronize direct and indirect fires to destroy the enemy and protect the force.

b. The CO normally designates the company's main effort to have priority of fires. This prioritizes requests when two or more units want fires at the same time. He also designates where to place obscuration or illumination, suppressive fires, and preparation fires.

7-6. PLANNING PROCESS

While the CO is developing and refining the tactical plan, the FSO is concurrently developing and refining the fire support portion of that plan. The FSO does not wait for the CO to complete the scheme of maneuver, he builds the fire plan using deliberate or hasty fire support planning, depending on the time available. In either case, targets must be placed in the fire support planning channels as soon as possible, so they can be processed at the battalion FSE or battery FDC. Regardless of which planning method is used, the company fire support plan must include:

- Target number and location.
- A description of the expected target.
- Primary and alternate persons responsible for shooting each target.
- The effect required (destroy, suppress, disrupt, or button-up armor) and purpose.
- Radio frequency and call sign to use in requesting fires.
- When to engage the target.
- Priority of fires.
- Size, location, code word, and emergency signal to begin FPF.

Other information may be included as necessary or appropriate.

a. The company FSO does most of the company fire planning; however, he may receive targets and target information from platoon leaders, platoon FOs, and the battalion FSO. The commander and FSO should not plan too many targets.

(1) The number of targets planned by the company and included in the formal fire plan depends upon the company's priority for fire support and the number of targets allotted to them. The total number of FA targets in the brigade fire support plan or the battalion mortar plan may be constrained as an excessive number of targets tends to dilute the focus of fire planning, and it can lead to increases in response time. However, these target allocations constraints do not constrain planning.

(2) Informal planning continues with target locations being recorded on terrain sketches, the FSO's map, or stored in the buffer group of the digital message device for quick reference and transmission. Fire planning for the company mortars should complement these plans; the primary constraint is normally ammunition availability and the rapid resupply ability. Care must be taken to ensure that planning focuses on the critical fire support requirements identified by the CO.

b. The company FSO completes the fire plan and briefs the CO. He may alter the plan or approve it as is; he makes the final decision. When the plan is approved by the CO, the FSO makes sure the targets are passed to the battalion FSE where the fire plans are integrated into the battalion scheme of maneuver.

c. The FSO must make sure platoon leaders and FOs are thoroughly familiar with the fire plan. He also provides target overlays to the platoon leaders, FOs, and the commander. The company fire support plan may also be disseminated as a target list and a fire support execution matrix. This must be done in sufficient time to allow subordinates to brief their platoons and sections. (A good plan given with the company order is better than a perfect plan handed out at the line of departure.)

d. Battalion fire support plans may be distributed in matrix format. The fire support execution matrix is a concise, effective tool showing the many factors of a detailed plan. It may aid the company FSO and the CO in understanding how the fire plan supports the scheme of maneuver. It explains what aspects of the fire support plan each FSO or FO is responsible for, and at what time during the battle these aspects apply. For more information on the battalion fire support matrix, see FM 7-20.

e. The advantage of the matrix is that it reduces the plan to one page and simplifies it. The company fire support matrix (Figure 7-1) also directs execution responsibilities and reduces the possibility that planned fires will not be executed. Dissemination of the fire plan is the responsibility of the CO. The CO and his key subordinate leaders must understand the categories of targets and how to engage those targets to create the desired result.

f. Figure 7-1 is an example of a completed fire support matrix for a company deliberate attack. In the AA, a field artillery FPF is allocated for 1st and 2d platoons; 3d platoon has been allocated a mortar FPF; 2d platoon has priority of mortar fires from the LD to Checkpoint 7. From Checkpoint 7 to Objective Green, 3d platoon has been allocated a mortar priority target and has designated it as CA3017; 2d platoon is backup for execution. 1st platoon has been allocated a mortar FPF; 2d and 3d platoons have been allocated field artillery FPFs. At company level, information in each box of the matrix includes—

(1) Priorities of indirect fire support to a platoon will appear in the upper left corner of the appropriate box (FA).

(2) If a unit is allocated an FPF, the type of indirect fire means responsible for firing the FPF will appear next to the indicator (FA FPF).

(3) The target number of priority targets allocated to a platoon will appear in the box preceded by the means of fire support responsible for engaging the target, and followed by the target number (MORT PRI TGT CA3014).

(4) If the company FSO is responsible for initiating specific fires, the target number, group, or series designation will be listed in the box for the FSO (CA3012). Specific guidelines concerning fires not included on the target list work sheet will be included in that box.

(5) Alternate element responsible for execution of specific fires will be listed in the lower right hand corner of the box (2D PLT). If fires have not been initiated when they were supposed to have been, that unit initiates them (unless ordered not to).

(6) Each fire support measure to be placed in effect, followed by a word designated for the measure, will be shown in the box (CFL CHUCK). For airspace coordination

areas, the time for the arrival of the planned CAS or attack helicopters is listed (ACA 1400Z).

(7) Other factors that apply to a certain platoon during a specific time may be included in the appropriate box. General guidance is issued in the written portion of the operation order.

	AA	LD	CP 7	OBJ GREEN
FSO	INITIAL PREP 1ST PLT	FIRE CA 3012 CFL CHUCK 2D PLT	FIRE C1A GROUP 3D PLT	ACA (CAS) 1400Z
1ST PLT	FA FPF	CFL CHUCK		MORTAR FPF
2D PLT	FA FPF	MORT PRI TGT CA 3014 CFL CHUCK		FA FPF
3D PLT	MORTAR FPF	CFL CHUCK	MORT PRI TGT CA 3017 2D PLT	FA FPF

Figure 7-1. Company fire support execution matrix.

7-7. TARGETS

A target can be personnel, vehicles, materiel, or terrain that is designated and numbered for reference or firing. Every target can be classified as either a target of opportunity (appears during combat, no attack has been planned) or a planned target (fire is prearranged). Individually planned targets may be further subdivided into either scheduled or on-call targets. A scheduled target is a planned target to be attacked at a specified time. An on-call target is a planned target on which fire is delivered when requested.

a. A priority target is one that could decisively affect the unit mission. The brigade commander may allocate artillery priority targets to battalions. Battalion commanders may in turn allocate priority targets to his subordinate companies. Normally, company priority targets are designated by the company commander (with recommendations provided by the FIST).

b. When the battalion commander designates priority targets, he provides specific guidance to the FSO and his subordinate companies as to when certain targets become priority targets, when they cease to be priority targets, the desired effects on the targets, and any special type of ammunition to be used. Firing units lay the guns on priority targets when they are not engaged in a fire mission; this reduces reaction time. Each field

artillery battery usually lays on one priority target. FPF is an example of a priority target in a defensive situation.

c. A target number is assigned to each planned target by the company FSO. Blocks of alphanumeric target numbers (two letters and four numbers) are provided for all fire-planning agencies. They serve as an index to all other information regarding a particular target, such as location, description, and size. All TRPs that are targeted by the company FSO are assigned target numbers. Mortar sections have blocks of target numbers, so they can assign a target number when an observer directs "record as target" upon completion of a registration.

d. A standard target is an area about 100 meters in radius. The symbol for a standard target is a cross. It may be canted if several targets are close to each other, or if the symbol might be mistaken as a grid intersection. The intersection of the lines marks the center of the target. The target list describes the nature of the target and other pertinent information. (This applies to targets planned for conventional and improved conventional ammunition.)

(1) *Offensive application.* These targets should be used to attack known, suspected, or likely enemy positions such as OPs, antitank sites, road intersections, or terrain that dominates attack axes.

(2) *Defensive application.* These targets should be selected to destroy the enemy as he attacks. Plan targets at fording sites, bridges, narrow defiles restricting movement, road intersections, obstacles, and possible overwatch positions.

e. When the expected target will be moving, extra planning is required. Determine a trigger point that will allow the FO sufficient time to initiate the call for fire, the firing unit time to prepare and fire, and the projectiles time to reach the target. The FO calls for fire as the vehicles/unit reaches the trigger point and the enemy continues moving to the target. If timed properly, enemy and projectiles will arrive at the target at the same time.

f. Other types of targets (linear, groups, series) are discussed in FM 7-20.

7-8. FINAL PROTECTIVE FIRES

FPFs are immediately available planned fires that block enemy movement, especially dismounted infantry approaching defensive lines or areas. These areas are integrated with defensive plans. The pattern of FPF plans may be varied to suit the tactical situation; they are drawn to scale on the target overlay. The size of the FPF is determined by the number and type of weapon used to fire on it (Figure 7-2). The CO is responsible for the precise location of FPFs. The company FSO will—

- Report the desired location of the FPF to the supporting FDC.
- Adjust indirect fire on the desired location, by weapon.
- Transmit the call to fire FPF to the supporting FDC.

The authority to call for the FPF is given to the leader (normally the CO or platoon leader) in whose area the FPF is located. The FPF has the highest priority of any target assigned to a fire support means. The FPF is only fired when required to repel the enemy's assault. Premature firing wastes ammunition and allows the enemy to avoid the impact area.

WEAPONS	SIZE (METERS)
60-mm Mortar (2 tubes).....	60 X30
81-mm Mortar (4 tubes)	100 X 35
105-mm Howitzer (6 guns)	180X 40
107-mm Mortar (3 tubes)	150 X40
107-mm Mortar (6 tubes)	300 X 40
155-mm Howitzer (4 guns)	200 X 50
155-mm Howitzer (6 guns)	300 X 50
155-mm Howitzer (8 guns)	400 X 50

Figure 7-2. FPF dimensions.

7-9. SPECIAL MUNITIONS

Obscuration fires use smoke and white phosphorus ammunition to degrade the enemy by obscuring his view of the battlefield. (High explosive ammunition may also obscure his view with dust and fires, but it should not be relied on as the primary means.) Because smoke is subject to changes in wind direction and terrain contours, its use must be coordinated with other friendly units affected by the operation. Used properly, obscuration fires can—

- Slow enemy vehicles to blackout speeds.
- Obscure the vision of enemy direct-fire weapons crews.
- Reduce accuracy of enemy-observed fires by obscuring OPs and CPs.
- Cause confusion and apprehension among enemy soldiers.
- Limit the effectiveness of the enemy's visual command and control signals.

a. Screening fires are closely related to obscuration fires; they also involve the use of smoke and WP. However, screening fires mask friendly maneuver elements to disguise the nature of their operations. For example, they are used to screen river crossings for an enveloping force. Screening fires may assist in consolidating an objective by placing smoke in areas beyond the objective. They may also be used to deceive the enemy into believing that a unit is maneuvering when it is not. Screening fires require the same precautions as obscuration fires.

b. Special munitions may be used for illumination, which may be scheduled or on-call. It is used to allow the use of friendly direct-fire weapons and adjustment of indirect fires, to illuminate areas of suspected enemy movement, or to orient moving units.

7-10. FORWARD OBSERVER'S POSITIONS

To ensure indirect fire can be called on a specific target, FOs must be in the proper position. As indirect-fire targets are planned to support the operation and passed from the company to the platoon, specific FOs are positioned to observe the target, the associated trigger line, or the TRP. The primary observers are the FOs that support each rifle platoon. However, other soldiers can perform this function as long as they have the communications capability and training, and they understand the mission.

a. Once the target has been passed to the platoon or included by the platoon in the fire support plan, the platoon leader must position the observer and make sure he understands the following in precise terms:

- (1) The nature and description of the targets he is expected to engage.
- (2) The terminal effects required (destroy, delay, disrupt, suppress, and so forth) and purpose.
- (3) The communications means, radio net, call signs, and FDC to be called.
- (4) When or under what circumstances targets are to be engaged.
- (5) The relative priority of targets.
- (6) The method of engagement and method of control to be used in the call for fire.
 - (a) Method of engagement (adjust fire or fire for effect). The need to adjust fires should be anticipated when the target location has been derived strictly through map-spot procedures. Using this technique, target location errors of up to 500 meters can be reasonably expected. First-round fire for effect should be employed when the target can be precisely located through previous adjustment, target area survey, or the use of laser range finders from known locations. When fires must be adjusted, the additional time that will be required to complete the fire mission, 2 to 4 minutes for each adjustment, must be considered in the planning process.
 - (b) Method of control (time on target, at my command, or when ready). The method of control should reflect the degree of synchronization required. While time on target and at my command provide the observer greater control of the precise timing of fires, this is done at the expense of flexibility in the firing units and can result in fewer missions being fired over a given period of time.
 - b. If the observer can not be positioned to see the target and trigger line or TRP under the visibility conditions expected at the time the target is to be fired, the headquarters that planned the target must be notified and a new target must be planned at a location that will meet the commander's purpose for fire support.

7-11. REHEARSAL AND EXECUTION

Once the fire support plan has been developed and coordinated, it should be rehearsed. As the company rehearses the maneuver, it rehearses the fire plan. The target list is executed as the maneuver is conducted, fires are requested (though not actually executed by the firing units) just as they would be during the operations. Under ideal circumstances, FPF could be adjusted during the rehearsal. Rehearsals on the terrain will reveal any problems in visibility, communications, and coordination of the fire support plan. Rehearsals should be conducted under degraded conditions (at night, in MOPP4) to make sure the plan can be executed in all circumstances.

- a. If time or conditions do not permit full-scale rehearsals, key leaders can meet, preferably at a good vantage point, and brief back the plan. A sand table depiction of the terrain can be used. Each player explains what he does, where he does it, and how he plans to overcome key-leader casualties. The fire support plan execution is integral to this process and is rehearsed in exactly the same way.
- b. As the operation is conducted, the fire plan is executed. Targets are fired as required and adjustments are made because of enemy reactions. Priority targets are cancelled as they are passed by friendly units or no longer relevant to the maneuver.

7-12. COMMUNICATIONS

The FSO can monitor three of four possible radio nets. The company's mission and priority determines the specific nets.

a. **Company Command Net FM (Voice).** Platoon leaders, the XO, and attachments use this net to send reports, receive instructions, and request fires. Any COLTs attached to the company will monitor this net. The company headquarters is the NCS. The company FSO will monitor it if he is separated from the command FSO.

b. **Battalion Mortar Fire Direction Net FM (Voice).** Observers use this net to request fires of the battalion mortar platoon. Other stations on the net include the FIST headquarters and the battalion FSE. The battalion mortar platoon is the NCS.

c. **Company Mortar Net (Voice).** Observers or the company FSO use this net to request fire from the company mortars.

d. **FA Fire Direction Net FM (Voice).** This net is used for FA fire direction. The FIST headquarters may digitally forward calls for fire from its observers on this net. The direct support battalion FDC is the NCS. When a COLT is present, it will use this net to request FA fires. The battery FDC and battalion FSE are also on this net.

7-13. INDIRECT FIRES IN CLOSE SUPPORT

Effective indirect fire support often requires artillery and mortar fires near our infantry soldiers. A safe integration of fires and maneuver this close demands careful planning, coordination, and knowledge of the supporting weapons. These close supporting fires are most commonly FPFs in a defensive operation and suppression/obscuration fires to support an assault on an enemy position. When planning these fires, the commander considers—

a. **The Effect Required.** In the defense, this may to destroy enemy soldiers and to degrade the effectiveness of enemy vehicles by causing them to fight buttoned-up. In the attack, the suppression/obscuration of enemy positions to allow the breach and seizure of a foothold on the objective is probably the desired effect.

b. **The Accuracy of the Delivery System.** There are many variables that impact on the accuracy of the weapon. The FSO has the technical knowledge to assist the commander. These weapons are area weapons systems; this means that every round fired from the same tube will impact in an area around the target or aiming point. This dispersion is greater in length than in width. The weather conditions (wind, temperature, and humidity), the condition of the weapon, and the proficiency of the crew also will affect the accuracy.

c. **The Protection of his Unit as the Rounds are Impacting.** If in well-prepared defensive positions with overhead cover, an FPF could be adjusted very close (just beyond bursting range). If required, the CO could even call for artillery fires right on his company position using proximity or time fuses for air bursts. It is much more dangerous to call for close indirect fires during an attack. The CO considers the terrain, the breach site, and the enemy positions to determine how close to adjust his supporting indirect fires.

d. **The Integration of Indirect Suppressive Fires.** When integrating indirect suppressive fires to support the breach and assault, the following points are key:

(1) The danger increases with the size of the weapons. Use artillery to isolate the objective, use the battalion mortars on enemy positions away from the breach site, and use the 60-mm mortars, M203s, and direct fire weapons for close suppression.

(2) Safety is increased by assaulting perpendicular to the GT line. If the rounds are coming over the head of the assault element, the margin of safety is reduced.

(3) Company mortars firing direct lay or direct alignment are the most responsive system. They are able to observe the rounds impact and adjust accordingly. The safest method is when firing the 60-mm mortars with bipods.

(4) Ideally, the firing units will register prior to firing close-support missions. If not, the first rounds fired may be off target by a considerable distance. Once the firing units are adjusted on a target, then any shifts from that target are much more reliable.

e. **Timings and Control.** The final requirement for integrating these fires is to establish timings and control to ensure these targets are initiated, adjusted, and shifted properly. If possible the company FSO should locate where he can observe these targets (possibly with the support element). A detailed execution matrix that assigns responsibility for each target to the leader or FO who is in the best position to control them should be developed. These soldiers must know when each target/series/group is fired, what effect is desired on which enemy positions, and when to lift or shift the fires. Consider the use of pyrotechnic or other signals to ensure communication.

7-14. TACTICAL AIR SUPPORT

At company level, the only concern with tactical air support is close air support. CAS missions are air strikes against hostile targets that are close to friendly forces. CAS missions must be carefully controlled to achieve the most benefit with the least risk to friendly forces. They usually support attacks in preparing an enemy-held objective for assault. In the defense, CAS will engage targets in the EAs and may assist as the enemy closes on defensive positions.

a. CAS missions are either preplanned (at battalion) or immediate. Preplanned missions are normally controlled by the Air Force forward air controller. Using specialized radios available to him, the ground FAC positions himself where he can see the target. If the FAC is unavailable or cannot reach the area in time, the FSO or FO can control the CAS mission. At company level, CAS concerns consist of the following:

(1) Mark friendly positions or vehicles to preclude accidental attack. This may be done with air recognition panels, colored smoke, other pyrotechnics, or similar devices recognizable from the air.

(2) Designate enemy positions or targets to assist the aircrew in acquisition and identification. This can be done with tracer fire, WP, smoke, or illumination rounds at night. Air panels and smoke or light can also be used to point toward the enemy from friendly positions.

(3) Use SEAD as a priority mission during friendly air strikes. Enemy air defense missile and gun systems are vulnerable to ground fire and suppression. SEAD can dramatically improve the survivability of aircraft and helicopters because it allows them to be more accurate with their weapons and remain on station longer.

(4) Protect and assist the ground FAC if necessary. The extent and priority of this task depends on the guidance in the battalion order. For example, when the company is the lead element, the FAC may move with it in an offensive maneuver. The company would provide security and resupply to the FAC while he remains with it.

b. Figure 7-3 is an example of a nine-line CAS request. It provides the information required to safely and accurately guide aircraft to the target. These considerations should be noted when filling out this request:

(1) Sometimes the marking round is not directly on the target. In this case, the requester gives an adjustment as soon as the round impacts, such as FROM THE MARK SOUTHWEST 150 METERS.

(2) If the mark is on the target, the requester gives HIT THE MARK.

(3) If multiple aircraft are engaging, the second aircraft can be given an adjustment from the first aircraft bombs, FROM LEADS' HITS, 400 METERS SOUTH.

(4) For the first eight lines, give only the information; do not read the title or line number. For line nine, always state the title EGRESS before the information.

(5) To stop the mission at any time before the bomb release, the requester states, ABORT, ABORT, ABORT.

1. INITIAL POINT:	<u>HILL 425</u>		
(This is the initial point the aircraft uses to position for the bomb run. It must be a well-defined point easily located from the air.)			
2. HEADING:	<u>95°</u>	MAG	OFFSET: L <u>X</u> R
(This is the heading from the IP to the target; it is given in degrees magnetic. At this time, the requester also gives the offset as either right or left. This is used—			
<ul style="list-style-type: none"> ● To assist the pilot in acquiring the target. ● To position the aircraft parallel or nearly parallel to friendly forces. ● To position the aircraft for laser acquisition. ● To position the aircraft to avoid enemy ADA weapons) 			
3. DISTANCE:	<u>5.7</u>		
(This is the distance (to the nearest tenth) from the IP to the target in nautical miles.)			
4. TARGET ELEVATION:	<u>340</u>	FEET MSL	
(This is the target elevation given in feet above mean sea level.)			
5. TARGET DESCRIPTION:	<u>7 ARMORED VEHICLES</u>		
(This is a short concise statement describing the target and what the pilot should look for.)			
6. TARGET LOCATION:	<u>NJ</u>	<u>572895</u>	
(This is the six-digit grid of the target.)			
7. MARK TYPE:	<u>WP</u>	CODE	<u>(N/A)</u>
(This is the method of target marking to be used. Ideally, within 300 meters and 30 seconds prior to aircraft's time on target. The code is only required when laser designation to identify the pulse			
8. FRIENDLIES:	<u>WEST 600 METERS</u>		
(This is the cardinal direction and distance in meters from the target to the nearest friendlies, such as WEST 350 METERS.)			
9. EGRESS:	<u>SOUTH</u>		
(This is the direction of departure from the target area, given as a cardinal direction.)			

Figure 7-3. Nine-line CAS request.